

RESOLUTION 7

DEVELOPMENT OF NATIONAL RADIO FREQUENCY MANAGEMENT¹

The World Administrative Radio Conference (Geneva, 1979),

considering

- a) that the Radio Regulations contain, *inter alia*, procedures for the coordination, notification and registration of frequencies which specify the rights and obligations of Member States;
- b) that the application of the above-mentioned procedures necessitates an appropriate radio frequency management unit in each Member State;
- c) that the existence of such a unit helps Member States to safeguard their rights and to discharge their obligations under the Radio Regulations;
- d) that the application of the Radio Regulations through the agency of such units is in the interest of the international community as a whole,

noting

that such a unit requires an adequate number of suitably qualified staff,

noting further

that the administrations of many developing countries need to create or to strengthen such a unit, appropriate to their administrative structure, with responsibility for the application of the Radio Regulations at the national and international levels,

recommends

that the administrations of such countries take appropriate action,

resolves

1. that meetings shall be organized between representatives of the Radiocommunication Bureau and the personnel involved in frequency management matters from administrations of developing and developed countries;
2. that such meetings shall be aimed at designing standard structures suitable for administrations of developing countries and include discussions concerning the establishment and operation of radio frequency management units;

¹ WRC-97 made editorial amendments to this Resolution.

3. that such meetings should also identify the particular needs of developing countries in establishing such units, and the means required to meet those needs,

recommends

that developing countries when planning the use of funds, particularly those received from international sources, make provision for participation in these meetings as well as for the introduction and development of such units,

invites the Council

to take the necessary measures for the organization of such meetings,

instructs the Secretary-General

1. to circulate this Resolution to all Member States of the Union, drawing their attention to its importance;
2. to circulate the results of such meetings, particularly to the developing countries;
3. to inform the developing countries of the types of assistance the ITU can provide in setting up the desired structure,

draws the attention of the next Plenipotentiary Conference to

1. the particular problems identified in this Resolution;
2. the need for prompt and effective action to resolve them;
3. the need to take all practicable measures to ensure that resources are made available for this purpose.

RESOLUTION 14

TRANSFER OF TECHNOLOGY¹

The World Administrative Radio Conference (Geneva, 1979),

considering

- a) the terms of the Resolution relating to International Economic Development and Cooperation (3362(S-VII)) adopted by the United Nations General Assembly at its seventh special session, and the terms of Section III of this Resolution, which emphasizes the role of science and technology in development;
- b) the terms of General Assembly Resolution 32/160, which proclaims a Transport and Communications Decade in Africa in the period 1978-1987, during which a World Communications Year is scheduled to be proclaimed;
- c) the decisions of the General Assembly relating to the preparation of an international development strategy during the Third United Nations Development Decade, i.e. in the 1980s (Resolution 33/193),

noting

that, at the recent United Nations Conference on Science and Technology for Development, Vienna, August 1979, the governments adopted a Declaration relating to a Programme of Action aimed at accelerating the application of science and technology for development,

aware

of the importance of the application of science and technology in telecommunications for the purposes of developing the services and attaining social, economic and cultural objectives,

also aware

of the important role of the ITU as the United Nations specialized agency responsible for undertaking activities leading to the attainment of the objectives set forth in the Constitution of the International Telecommunication Union,

resolves to urge

1. *the governments of the Member States*, particularly those of the developing countries, and their administrations, to take steps to establish national telecommunication development policies to strengthen their technical cooperation activities in order to achieve the efficient transfer of telecommunication technology, with a view to improving telecommunication services of all types, especially in the field of radiocommunications;

¹ WRC-97 made editorial amendments to this Resolution.

2. *administrations* to participate to the maximum extent practicable in the Study Groups of the Sectors of the Union, which are important forums for the transfer of information on the progress and application of telecommunication technology,

resolves to instruct the Secretary-General

1. to strengthen further those technical cooperation activities geared to the planning, setting up, maintenance and operation of telecommunication systems and to the training of staff for such purposes, with a view to accelerating the transfer and satisfactory application of technology in favour of development, having regard to the specific requirements of each country;
2. to seek, at the international level, the resources required to accelerate these technical cooperation programmes, particularly funds which could be allocated under the Vienna Programme of Action;
3. to bring the present Resolution to the notice of all the Member States of the Union and the competent bodies of the United Nations,

invites the Council

to keep abreast of the progress made in the attainment of the objectives set forth in this Resolution and to report on such progress, as appropriate, to the next Plenipotentiary Conference.

RESOLUTION 15

INTERNATIONAL COOPERATION AND TECHNICAL ASSISTANCE IN THE FIELD OF SPACE RADIOCOMMUNICATIONS¹

The World Administrative Radio Conference (Geneva, 1979),

considering

- a) that a large number of Member States of the International Telecommunication Union are not in a position to take immediate advantage of satellite techniques for the development of their telecommunication services;
- b) that such Member States would benefit immensely through the technical assistance programmes sponsored by the Union,

recognizing

- a) that international satellite-communication systems are subject to the Convention and Regulations and that they permit participation of all countries including, in particular, the developing countries, in space communication systems;
- b) that a number of problems need to be solved in order that the developing countries may participate effectively in international space communication systems and integrate these systems with their national telecommunication networks,

resolves to invite the Council

1. to draw the attention of administrations to the means by which they may avail themselves of technical assistance in connection with the introduction of space communications;
2. to consider the most effective manner in which requests for such assistance by Member States of the Union may be formulated and presented in order to secure maximum financial and other assistance;
3. to consider how best to make use of funds made available by the United Nations in accordance with its Resolution 1721 to give technical and other assistance to administrations of Member States of the Union to make effective use of space communications;
4. to consider in what way the work of the ITU-T, ITU-R and ITU-D and other organs in the structure of the Union may be utilized in the most effective way for the information and assistance of administrations of Member States of the Union in the development of space radiocommunications.

¹ WRC-97 made editorial amendments to this Resolution.

RESOLUTION 18 (Mob-83)

**PROCEDURE FOR IDENTIFYING AND ANNOUNCING
POSITION OF SHIPS AND AIRCRAFT OF STATES NOT
PARTIES TO AN ARMED CONFLICT¹**

The World Administrative Radio Conference for the Mobile Services (Geneva, 1983),

considering

- a) that ships and aircraft encounter considerable risk in the vicinity of an area of armed conflict;
- b) that for the safety of life and property it is desirable for ships and aircraft of States not parties to an armed conflict to be able to identify themselves and announce their position in such circumstances;
- c) that radiocommunication offers such ships and aircraft a rapid means of self-identification and providing location information prior to their entering areas of armed conflict and during their passage through the areas;
- d) that it is considered desirable to provide a supplementary signal and procedure for use, in accordance with customary practice, in the area of armed conflict by ships and aircraft of States representing themselves as not parties to an armed conflict,

resolves

1. that the frequencies for urgency signal and messages specified in Appendix S13 [No. 3201] of the Radio Regulations may be used by ships and aircraft of States not parties to an armed conflict for self-identification and establishing communications. The transmission will consist of the urgency or safety signals, as appropriate, described in Appendix S13 [Article 40] followed by the addition of the single group "NNN" in radiotelegraphy and by the addition of the single word "NEUTRAL" pronounced as in French "neutral" in radiotelephony. As soon as practicable, communications shall be transferred to an appropriate working frequency;
2. that the use of the signal as described in the preceding paragraph indicates that the message which follows concerns a ship or aircraft of a State not party to an armed conflict. The message shall convey at least the following data:
 - a) call sign or other recognized means of identification of such ship or aircraft;
 - b) position of such ship or aircraft;
 - c) number and type of such ships or aircraft;
 - d) intended route;

¹ WRC-97 made editorial amendments to this Resolution.

- e) estimated time en route and of departure and arrival, as appropriate;
 - f) any other information, such as flight altitude, radio frequencies guarded, languages and secondary surveillance radar modes and codes;
3. that the provisions of Appendix S13 [Article 40] relating to Urgency and Safety Transmissions, and Medical Transports shall apply as appropriate to the use of the urgency and safety signals, respectively, by such ship or aircraft;
 4. that the identification and location of ships of a State not party to an armed conflict may be effected by means of appropriate standard maritime radar transponders. The identification and location of aircraft of a State not party to an armed conflict may be effected by the use of the secondary surveillance radar (SSR) system in accordance with procedures to be recommended by the International Civil Aviation Organization (ICAO);
 5. that the use of the signals described above would not confer or imply recognition of any rights or duties of a State not party to an armed conflict or a party to the conflict, except as may be recognized by common agreement between the parties to the conflict and a non-party;
 6. to encourage parties to a conflict to enter into such agreements,

requests the Secretary-General

to communicate the contents of this Resolution to the International Maritime Organization (IMO) and the International Civil Aviation Organization (ICAO) for such action as they may consider appropriate,

requests ITU-R

to recommend an appropriate signal in the digital selective calling system for use in the maritime mobile service and other appropriate information as necessary.

- 414 -

RESOLUTION 105 (Orb-88)

**IMPROVEMENT OF THE QUALITY OF CERTAIN ALLOTMENTS IN
PART A OF THE FIXED-SATELLITE SERVICE PLAN¹**

The World Administrative Radio Conference on the Use of the Geostationary-Satellite Orbit and the Planning of Space Services Utilizing It (Second Session – Geneva, 1988),

considering

- a) that the delegations of the administrations participating in this Conference have made intensive efforts to achieve the goals identified in the agenda of the Conference;
- b) that the Conference has made intensive use of the ITU computer facilities and associated software to develop an Allotment Plan for the fixed-satellite service in the frequency bands identified for the Plan;
- c) that a Plan has been developed which guarantees one coverage for each administration (Part A of the Plan) and accommodates existing systems (Part B of the Plan);
- d) that, in the case of a small number of allotments in the Plan, the reference value of 26 dB has not been achieved for the *C/I* ratio,

noting

that in spite of all efforts made by the Conference, some allotments in Part A of the Plan are still below the reference value for *C/I*,

noting further

that the evaluation of some solutions for raising the value of *C/I* would be facilitated by appropriate consultations after the Conference between administrations working together in a spirit of cooperation to find equitable solutions,

recognizing

the right of each administration to have a value of *C/I* of 26 dB for its allotment,

believing

that further cooperation among administrations, and the application of technical aspects to particular situations, could improve the allotments in *considering c)* above, given the progress made in this field,

¹ WRC-97 made editorial amendments to this Resolution.

resolves

1. that, following the Conference, an administration which has an allotment with a value of *C/I* lower than 26 dB, and administrations whose allotments may have an impact on that allotment, should make every effort to reach agreement on measures to improve the quality of that allotment;
2. that, with the agreement of the administrations concerned, consideration could be given to slight adjustments to the nominal orbital position of other satellites on condition that all agreed protection criteria are observed,

invites administrations

to implement the provision of this Resolution in the spirit of cooperation which characterizes the relations between Member States of ITU,

calls upon

the Sectors of ITU to provide technical advice, if requested by the administrations concerned, to facilitate mutually satisfactory solutions.

- 4 -

RESOLUTION 412 (WARC-92)

**TRANSFER OF FREQUENCY ASSIGNMENTS OF AERONAUTICAL STATIONS
OPERATING IN THE FREQUENCY BANDS ALLOCATED EXCLUSIVELY TO THE
AERONAUTICAL MOBILE (OR) SERVICE BETWEEN 3 025 kHz AND 18 030 kHz¹**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that the conditions for use of each of the frequency bands between 3 025 kHz and 18 030 kHz allocated exclusively to the aeronautical mobile (OR) service were modified by this Conference so as to enable a more efficient usage of the frequency spectrum available;
- b) that administrations will need to change the frequencies of their aeronautical and aircraft stations to bring them into conformity with the new Frequency Allotment Plan, as contained in Appendix S26 [26(Rev.)], and to notify such transfers, where appropriate, to the Radiocommunication Bureau,

resolves

- 1. that, at an appropriate date, the Radiocommunication Bureau shall send each Administration a list of assignments to stations of the aeronautical mobile (OR) service entered on its behalf in the Master Register in the bands allocated exclusively to that service between 3 025 kHz and 18 030 kHz;
- 2. that, in the above list, the Radiocommunication Bureau shall indicate, for each frequency assignment, a replacement frequency(-ies) which fulfil(s) the provisions of Appendix S26 [26(Rev.)] and which is(are) intended to replace the frequency of the assignment concerned;
- 3. that, after receipt of the above list, administrations shall take all the necessary measures to modify the characteristics of their assignments, so as to bring them into conformity with the provisions of Appendix S26 [26(Rev.)], as early as possible and in any event, not later than 15 December 1997; any modification which has been implemented shall be notified to the Radiocommunication Bureau in accordance with No. S11.2 of the Radio Regulations;
- 4. that the frequency assignments notified by administrations under paragraph 3 above shall be examined by the Radiocommunication Bureau under the relevant provisions of Article S11 [12] of the Radio Regulations, as modified by this Conference;

¹ WRC-97 made editorial amendments to this Resolution.

5. that the assignments existing in the Master Register on 15 December 1997 which are not in conformity with the provisions of Appendix S26 [26(Rev.)] shall be treated as follows:

5.1 within 60 days from 15 December 1997, the Radiocommunication Bureau shall send relevant extracts of the Master Register to the administrations concerned advising them that, under this Resolution, the assignments in question are to be modified, within a period of 90 days, so as to meet the provisions of Appendix S26 [26(Rev.)];

5.2 if an administration fails to notify the Radiocommunication Bureau of the modifications within the prescribed period, the original entry will be retained in the Master Register for information only, without a date in Column 2, without a finding in Column 13A and with a suitable remark in the Remarks column. The administration will be advised of this action.

RESOLUTION 522 (WARC-92)

FURTHER WORK BY ITU-R CONCERNING THE BROADCASTING-SATELLITE SERVICE (SOUND)¹

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that this Conference has made frequency allocations for the broadcasting-satellite service (sound) (BSS (sound)) down links and the complementary terrestrial service in the bands specified in Article S5 [8], with an interim procedure to govern the introduction of this service;
- b) that further technical development is necessary for the introduction of BSS (sound);
- c) that BSS (sound) systems could employ satellites in the geostationary-satellite orbit (GSO) or in non-geostationary-satellite orbits (non-GSO);
- d) that the most urgent guidance required will relate to the means to be employed for coordinating and avoiding mutual harmful interference between non-GSO systems, between GSO and non-GSO systems of the broadcasting-satellite service (sound), and between BSS (sound) systems and the systems of other services,

noting

the provisions of No. S23.13 [2674] of the Radio Regulations,

resolves

- 1. that ITU-R should study this subject as a matter of urgency;
- 2. that ITU-R studies should focus in particular on:
 - i) the characteristics of GSO and non-GSO BSS (sound) systems compatible with No. S23.13 [2674] of the Radio Regulations,
 - ii) the appropriate sharing criteria;
- 3. to invite administrations and the Radiocommunication Bureau to participate in the work of the ITU-R study groups on this subject;
- 4. to invite administrations which introduce BSS (sound) systems to publish reports on their experience of such systems,

invites the Council

to take account of the urgent need for regulatory provisions including measures to ensure frequency sharing between the BSS (sound) and other services in the same frequency bands, and to place this matter on the agenda of the next competent radiocommunication conference,

instructs the Secretary-General

to bring this Resolution to the notice of the Council.

¹ WRC-97 made editorial amendments to this Resolution.

RESOLUTION 703 (Rev.WARC-92)

**CALCULATION METHODS AND INTERFERENCE CRITERIA RECOMMENDED
BY ITU-R FOR SHARING FREQUENCY BANDS BETWEEN SPACE
RADIOCOMMUNICATION AND TERRESTRIAL RADIOCOMMUNICATION
SERVICES OR BETWEEN SPACE RADIOCOMMUNICATION SERVICES¹**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a)* that, in frequency bands shared with equal rights by space radiocommunication and terrestrial radiocommunication services, it is necessary to impose certain technical limitations and coordination procedures on each of the sharing services for the purpose of limiting mutual interference;
- b)* that, in frequency bands shared by space stations located on geostationary satellites, it is necessary to impose coordination procedures for the purpose of limiting mutual interference;
- c)* that the calculation methods and interference criteria relating to coordination procedures referred to in paragraphs *a)* and *b)* above are based upon ITU-R Recommendations;
- d)* that, in recognition of the successful sharing of the frequency bands by space radiocommunication and terrestrial radiocommunication services, and the continuing improvements in space technology and that of the Earth segment, each Radiocommunication Assembly has improved upon some of the technical criteria recommended by the preceding Assembly;
- e)* that the ITU Radiocommunication Assembly has approved a procedure for approving Recommendations between radiocommunication assemblies;
- f)* that the International Telecommunication Constitution recognizes the right of Member States of the Union to make special arrangements on telecommunication matters; however, such arrangements shall not be in conflict with the terms of the Constitution, the Convention or the Regulations annexed thereto as far as harmful interference to the radio services of other countries is concerned,

¹ WRC-97 made editorial amendments to this Resolution.

is of the opinion

- a) that future decisions of ITU-R are likely to make further changes in the recommended calculation methods and interference criteria;
- b) that administrations should receive advance information of the drafts of the relevant ITU-R Recommendations;
- c) that the administrations should whenever possible apply the current ITU-R Recommendations on sharing criteria when planning systems for use in frequency bands shared with equal rights between space radiocommunication and terrestrial radiocommunication services, or between space radiocommunication services,

invites administrations

to submit contributions to the ITU-R study groups, providing information on practical results and experience of sharing between terrestrial and space radiocommunication services or between space services, which help to bring about significant improvements in coordination procedures, calculation methods and harmful interference thresholds, and thereby to optimize the available orbit/spectrum resources,

resolves

1. that the Director of the Radiocommunication Bureau, in consultation with study group Chairmen, shall prepare a list identifying the relevant parts of new or revised Recommendations approved by ITU-R affecting the calculation methods and the interference criteria and also those specific sections of the Radio Regulations to which they are applicable, relating to sharing between space radiocommunication and terrestrial radiocommunication services, or between space radiocommunication services. This list shall be prepared within thirty days following the approval of these Recommendations;
2. that the Director shall forward this list and the appropriate texts to all administrations within thirty days, asking them to indicate within four months those ITU-R Recommendations or specific technical criteria defined in the Recommendations referred to in paragraph 1 above to which they agree for use in the application of the pertinent provisions of the Radio Regulations;
3. that, should an administration, in its reply to the consultation conducted by the Director under paragraph 2 above, indicate that certain ITU-R Recommendations or technical criteria defined in those Recommendations are unacceptable, the relevant calculation methods and the interference criteria defined in the Radio Regulations shall continue to apply with respect to cases involving that administration;
4. that the Radiocommunication Bureau shall publish, for the information of all administrations, a list based on the replies to the enquiry, of the ITU-R Recommendations or of the relevant calculation methods and the interference criteria defined in those Recommendations, indicating the administrations to which each of those Recommendations or relevant technical criteria are acceptable or are not and the administrations which did not reply;

5. that the administrations which do not reply within four months to the consultation conducted by the Director under paragraph 2 above should, however, inform the Director of their decision on the application of these Recommendations under the relevant provisions of the Radio Regulations at a later stage;
6. that the Radiocommunication Bureau shall take into account:
 - a) the applicability of ITU-R calculation methods and interference criteria when making technical examinations with respect to cases involving only administrations to which such methods and criteria are acceptable;
 - b) the applicability of the calculation methods and interference criteria defined in the Radio Regulations in accordance with the list referred to in paragraph 4 above, when making technical examinations with respect to cases involving the administrations which did not accept or did not reply to the consultation conducted by the Radiocommunication Bureau under paragraph 2 above.

RECOMMENDATION 9

MEASURES TO BE TAKEN TO PREVENT THE OPERATION OF BROADCASTING STATIONS ON BOARD SHIPS OR AIRCRAFT OUTSIDE NATIONAL TERRITORIES¹

The World Administrative Radio Conference (Geneva, 1979),

considering

- a) that the operation of broadcasting stations on board ships or aircraft outside national territories is in conflict with the provisions of No. S23.2 [2665] and Appendix S13 [No. 3603] of the Radio Regulations;
- b) that such operation is contrary to the orderly use of the radio frequency spectrum and may result in chaotic conditions;
- c) that the operation of such broadcasting stations may take place outside the jurisdiction of Member States, thereby making the direct application of national laws difficult;
- d) that a particularly difficult legal situation arises when such broadcasting stations are operated on board ships or aircraft not duly registered in any country,

recommends

1. that administrations ask their governments to study possible means, direct or indirect, to prevent or suspend such operations and, where appropriate, take the necessary action;
2. that administrations inform the Secretary-General of the results of these studies and submit any other information which may be of general interest, so that the Secretary-General can inform Member States accordingly.

¹ WRC-97 made editorial amendments to this Recommendation.

RECOMMENDATION 32 (Orb-88)

**INTERNATIONAL MONITORING OF EMISSIONS
ORIGINATING FROM SPACE STATIONS¹**

The World Administrative Radio Conference on the Use of the Geostationary-Satellite Orbit and the Planning of Space Services Utilizing It (Second Session – Geneva, 1988),

considering

- a) that the geostationary-satellite orbit and the radio-frequency spectrum are limited natural resources and are being increasingly utilized by space services;
- b) that it is desirable to ensure efficient and economical use of the radio-frequency spectrum and geostationary-satellite orbit and also to eliminate harmful interference;
- c) the provisions of the Radio Regulations, under which the Radiocommunication Bureau shall review the entries in the Master International Frequency Register with a view to bringing them into conformity, to the maximum extent practicable, with the actual use being made of the radio spectrum;
- d) that monitoring information obtained should assist the Radiocommunication Bureau in discharging that function;
- e) Recommendation 2 of the World Administrative Radio Conference, 1979, relating to the examination by world radiocommunication conferences of the situation with regard to occupation of the frequency spectrum in space radiocommunications;
- f) that facilities for monitoring of emissions originating from space stations may be expensive,

noting

that ITU-R is studying the question of monitoring of radio emissions from spacecraft at fixed monitoring stations and Recommendation ITU-R SM.1054 contains current results of these studies,

invites ITU-R

to continue the studies in collaboration with the Bureau, and to provide technical guidelines concerning the space monitoring facilities,

recommends administrations

- 1. to participate in ITU-R studies concerning the possible development of guidelines for space monitoring facilities;
- 2. to consider the various aspects of monitoring the emissions originating from space stations to enable the provisions of Article S16 [20] of the Radio Regulations to be applied.

¹ WRC-97 made editorial amendments to this Recommendation.

RECOMMENDATION 63

RELATING TO THE PROVISION OF FORMULAE AND EXAMPLES FOR THE CALCULATION OF NECESSARY BANDWIDTHS¹

The World Administrative Radio Conference (Geneva, 1979),

considering

- a) that Appendix S1, Section I [Article 4] of the Radio Regulations requires that the necessary bandwidth be part of the full designation of emissions;
- b) that Recommendation ITU-R SM.1138, gives a partial list of examples and formulae for the calculation of the necessary bandwidth of some typical emissions;
- c) that sufficient information is not available for the determination of the K-factors used throughout the table of examples of the necessary bandwidth in Appendix S1 [6];
- d) that, especially with regard to the efficient utilization of the radio frequency spectrum, monitoring and the notification of emissions, it is required that necessary bandwidths for the individual classes of emission be known;
- e) that for reasons of simplification and international uniformity it is desirable that measurements for determining the necessary bandwidth be made as seldom as possible,

recommends that ITU-R

- 1. provide, from time to time, additional formulae for the determination of necessary bandwidth for common classes of emission, as well as examples to supplement those given in Recommendation ITU-R M.1138;
- 2. study and provide values of supplementary K-factors required for the calculation of the necessary bandwidth for common classes of emission,

invites the Radiocommunication Bureau

to publish examples of such calculations in the Preface to the International Frequency List.

¹ WRC-97 made editorial amendments to this Recommendation.

RECOMMENDATION 71

STANDARDIZATION OF THE TECHNICAL AND OPERATIONAL CHARACTERISTICS OF RADIO EQUIPMENT¹

The World Administrative Radio Conference (Geneva, 1979),

considering

- a) that administrations are confronted with the necessity of allocating increasing resources to the regulation of radio equipment performance;
- b) that administrations, and in particular those in developing countries, often have difficulty in providing such resources;
- c) that it would be of advantage to apply, as far as practicable, any mutually agreed standards and associated type approvals;
- d) that a number of international bodies including the ITU-R, ICAO, IMO, CISPR and the IEC already provide recommendations and standards for technical and operating characteristics applicable to equipment performance and its measurement;
- e) that in this context the specific requirements of developing countries have not always been taken fully into account,

recommends

- 1. that administrations endeavour to cooperate with a view to establishing international performance specifications and associated measuring methods that could be used as models for domestic standards for radio equipment;
- 2. that such international performance specifications and associated measuring methods respond to widely representative conditions including specific requirements of developing countries;
- 3. that, when such international performance specifications for radio equipment exist, administrations, as far as practicable, adopt these specifications as a basis for their national standards;
- 4. that administrations consider as far as practicable mutual acceptance for the type approval of equipment which conforms to such performance specifications.

¹ WRC-97 made editorial amendments to this Recommendation.

- 407 -

RECOMMENDATION 604 (Rev.Mob-87)

**FUTURE USE AND CHARACTERISTICS OF EMERGENCY
POSITION-INDICATING RADIOBEACONS (EPIRBs)^{1, 2}**

The World Administrative Radio Conference for the Mobile Services (Geneva, 1987),

considering

- a) that the essential purpose of EPIRB signals is to help locate survivors in search and rescue operations;
- b) that requirements for carriage of EPIRBs operating on the frequencies 121.5 and 243 MHz have been included in the 1983 Amendments to the International Convention for the Safety of Life at Sea (1974);
- c) that the International Maritime Organization (IMO) has been considering various types of EPIRBs;
- d) that the IMO has stressed in its Resolution A.279 (VIII) the urgent need for unification of the characteristics of EPIRBs,

recognizing

- a) that there are provisions in the Radio Regulations for EPIRBs on the frequencies 2 182 kHz, 121.5 MHz, 156.525 MHz, 243 MHz, and in the bands 406 - 406.1 MHz and 1 645.5 - 1 646.5 MHz;
- b) that Recommendation ITU-R M.690-1 [Appendix 37A] was approved in order to facilitate the application of a universal standard for EPIRBs operating on the frequencies 121.5 MHz and 243 MHz;
- c) that for EPIRBs operating on 121.5 MHz and 243 MHz, there is a need to improve their function of being detected and located by satellite systems,

recommends

- 1. that, in view of their mutual interest in this matter, IMO and the International Civil Aviation Organization (ICAO) be invited, as a matter of urgency, to review and align their concepts for EPIRBs in regard to search and rescue operations and the safety of life at sea;
- 2. that ITU-R continue to study technical and operating questions for EPIRBs, in consideration of concepts stated by the IMO and ICAO;
- 3. that ITU-R and ICAO study, as a matter of urgency, the technical and operational questions arising from paragraph d) of Annex 1 to Recommendation ITU-R M.690-1 [Appendix 37A],

instructs the Secretary-General

to communicate this Recommendation to the IMO and ICAO.

¹ For the purpose of this Recommendation, references to EPIRBs include references to satellite EPIRBs as appropriate.

² WRC-97 made editorial amendments to this Recommendation.

RECOMMENDATION 705

CRITERIA TO BE APPLIED FOR FREQUENCY SHARING BETWEEN THE BROADCASTING-SATELLITE SERVICE AND THE TERRESTRIAL BROADCASTING SERVICE IN THE BAND 620 - 790 MHz¹

The World Administrative Radio Conference (Geneva, 1979),

considering

- a) that, within the band 620 - 790 MHz, assignments may be made to television stations using frequency modulation in the broadcasting-satellite service;
- b) that it is necessary to have a power flux-density limit which will provide adequate protection to the terrestrial broadcasting service,

taking into account

- a) that the conclusions of the Special Joint Meeting of the CCIR (Geneva, 1971), indicated that the following power flux-density limits are necessary to protect the terrestrial broadcasting service:

-121 dB(W/m ²)	for $\delta \leq 20^\circ$
-121 + 0.4 ($\delta - 20$) dB(W/m ²)	for $20^\circ < \delta \leq 60^\circ$
-105 dB(W/m ²)	for $60^\circ < \delta \leq 90^\circ$

where δ is the angle of arrival above the horizontal plane (in degrees);

- b) that additional tests carried out by one administration after the Special Joint Meeting of the CCIR indicated that the following more conservative power flux-density limits may be necessary:

-130 dB(W/m ²)	for $\delta \leq 20^\circ$
-130 + 0.4 ($\delta - 20$) dB(W/m ²)	for $20^\circ < \delta \leq 60^\circ$
-114 dB(W/m ²)	for $60^\circ < \delta \leq 90^\circ$

where δ is the angle of arrival above the horizontal plane (in degrees);

- c) that Report 631-1 of the former CCIR gives the results of studies carried out up to 1978;
- d) that additional information is required on the protection ratio for interference from an FM television signal into a VSB television signal for both the 625- and 525-line systems;
- e) that with terrestrial television receiving systems using current technology, the minimum field strength to be protected may in some cases be less than the values included in Recommendation ITU-R BT.417;

¹ WRC-97 made editorial amendments to this Recommendation.

- f) that account may have to be taken of ground reflections;
- g) that energy dispersal techniques may reduce the required protection ratio and should be used if shown to be effective,

recommends

1. that in view of the absence of sufficient information on tests under operational conditions and in order to provide sharing criteria, on a provisional basis, the maximum power flux-density produced at the surface of the Earth within the service area of a terrestrial broadcasting station (see Recommendation ITU-R BT.417) by a space station in the broadcasting-satellite service in the band 620 - 790 MHz should not exceed:

-129 dB(W/m ²)	for $\delta \leq 20^\circ$
-129 + 0.4 ($\delta - 20$) dB(W/m ²)	for $20^\circ < \delta \leq 60^\circ$
-113 dB(W/m ²)	for $60^\circ < \delta \leq 90^\circ$

where δ is the angle of arrival above the horizontal plane (in degrees);

- 2. that these limits be not exceeded on the territory of a country except with the agreement of its administration;
- 3. that the transmission of unmodulated carriers should be avoided;
- 4. that ITU-R urgently study the sharing criteria to be applied to frequency sharing between the broadcasting-satellite service, and the terrestrial broadcasting service in the band 620 - 790 MHz and prepare a Recommendation on power flux-densities to be used in lieu of the above provisional limits;
- 5. that in its studies ITU-R consider in particular the following aspects:
 - 5.1 the required protection ratio for both 525- and 625-line systems for interference from an FM television signal into a VSB television signal;
 - 5.2 the minimum field strength to be protected for the terrestrial television service taking into account the current state of the art;
 - 5.3 the effect of ground reflections;
 - 5.4 the number of broadcasting satellites that may be visible from a terrestrial broadcasting receiver;
 - 5.5 the effect of polarization discrimination;
 - 5.6 the effect of antenna directivity;
- 6. that in its studies ITU-R should consider the advantages of energy dispersal techniques in the broadcasting-satellite service (television).

RECOMMENDATION 719 (WARC-92)

**MULTISERVICE SATELLITE NETWORKS USING THE
GEOSTATIONARY-SATELLITE ORBIT¹**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that the Conference has allocated, on a primary basis, the bands 19.7 - 20.2 GHz and 29.5 - 30 GHz in Region 2, and 20.1 - 20.2 GHz and 29.9 - 30 GHz in Regions 1 and 3 to the mobile-satellite service;
- b) that these bands are also allocated to the fixed-satellite service;
- c) that some administrations have expressed interest in developing multiservice satellite networks in these bands;
- d) that Recommendation 715 (Orb-88) calls for simplification of the process for bringing into use satellite networks with different classes of user terminals;
- e) that the Voluntary Group of Experts (VGE), among other means of simplifying the Radio Regulations, completed its study of service definitions accommodating a range of services,

recognizing

that the introduction of multiservice satellite networks using, *inter alia*, mobile earth stations, may have an impact on networks operating in the fixed-satellite service,

recommends

that, as a matter of urgency, studies should be carried out on the technical characteristics, including pointing techniques of multiservice satellite networks using the geostationary-satellite networks encompassing mobile-satellite and fixed-satellite applications, and the sharing criteria necessary for compatibility with the fixed-satellite service in the frequency bands referred to above,

invites ITU-R

to carry out these studies,

recommends administrations

to participate actively in these studies,

¹ WRC-97 made editorial amendments to this Recommendation.

recommends further

- a) that a future competent world radiocommunication conference review the allocations of these bands, taking into account the results of the ITU-R studies and the work of the VGE;
- b) that a future competent world radiocommunication conference consider the requirement for a single service definition encompassing mobile-satellite service and fixed-satellite service applications, and the possible need for additional frequency spectrum to accommodate the growth of these services,

invites the Council

to place this matter on the agenda of the next competent world radiocommunication conference.

List of actions with regard to WARC/WRC resolutions

Resolution No.	Subject	Action
8 (Rev.Mob-87)	Transfer procedures/changes in HF-FX	NOC
16 (WARC-79)	Telecommunications for rural development	SUP
17 (WARC-79)	Conference structure	SUP
19 (Mob-87)	Regional conferences	SUP
22 (WARC-92)	Changes in allocations/assistance	SUP
32	Use of frequency assignments for terrestrial and space radiocommunication stations in the 11.7 - 12.2 GHz band in Region 3 and the 11.7 - 12.5 GHz band in Region 1	SUP
34	Planning the band 12.5 - 12.75 GHz in R3	NOC
37 (WARC-79)	Automated Frequency Management	SUP
38 (Rev.Mob-87)	Reassignment of frequencies in 2 MHz (R1)	SUP
39 (Mob-83)	Use of monitoring facilities in applying decisions of WARC's	SUP
42 (Rev.Orb-88)	Interim systems in R2 (BSS and FSS) in bands governed by AP30/30A	NOC
45 (Orb-88)	Improved accuracy of MIFR, IFL, List VIIIA	SUP
47 (WRC-95)	Immediate application of RS46 in some bands	SUP
48 (WRC-95)	Conditions for recommencing the procedures for API	SUP
61 (WARC-79)	Division of the world into climatic zones	SUP
65 (WARC-79)	Cross-referencing of ITU-R Recommendations in RR	SUP
69 (Orb-88)	Simplified methods for interference assessment	SUP
70 (WARC-92)	Establishment of standards for the operation of LEOs	NOC
93 (WARC-92)	Treatment of Resolutions/Recommendations	SUP
94 (WARC-92)	Review of Resolutions/Recommendations	SUP
104 (Orb-88)	Application of RR 1550	SUP
106 (Orb-88)	Provisional application of AP30A	SUP
107 (Orb-88)	Existing networks AP30B	SUP
109 (Orb-88)	AP30A in MIFR	SUP